NOAA
R352

# GENERAL NOTES

1. STERN REFERENCE POINT IS DEFINED AS THE AFTER-END OF THE MAIN DECK ON CENTERLINE: SEE DETAIL 7-D. LOCATION OF STERN REFERENCE POINT RELATIVE TO FRAME SYSTEM IS UNCONFIRMED AS 3'-1" AFT OF FRAME 90. CONFIRM LOCATION OF SRP RELATIVE TO SHIP'S FRAME SYSTEM BEFORE PROCEEDING TO DOCK. ADJUST VALUES FOR "FWD OF STERN REF. POINT" IN TABLE 15-C & 12-D, IN ACCORDANCE WITH MEASUREMENT OF SRP RELATIVE TO FRAME SYSTEM.

2. THIS DRAWING PROVIDES THE DOCKING DRAWING FOR THE NOAA SHIP NANCY FOSTER AND WAS DEVELOPED UNDER TAR SSI-021(02) BASED ON REFERENCE PLANS FOR SISTERSHIP "USNV CAPE FLATTERY" (YTT 9), AND A SHIPCHECK CONDUCTED AT CASCADE GENERAL, INC. IN PORTLAND, OREGON ON OCTOBER 28-30, 2002, FOLLOWING THE DEMILITARIZATION AND CONVERSION OF THE EX-USNV "AGATE PASS" (YTT 12) TO NOAA SHIP "NANCY FOSTER." EXACT LOCATIONS OF ALL PENETRATIONS AND OBSTRUCTIONS ARE BASED ON REVIEW OF EXISTING REFERENCE DRAWINGS, NOT ACTUAL MEASUREMENT.

3. DIMENSIONS
   (A) LONGITUDINAL LOCATIONS OF ALL ITEMS ARE GIVEN FROM THE STERN REFERENCE POINT (AFTER END OF MAIN DECK AT CENTERLINE.)
   (B) HEIGHTS OF ALL ITEMS ARE GIVEN FROM THE BOTTOM OF THE KEEL AMIDSHIPS EXTENDED.
   (C) LONGITUDINAL LOCATIONS AND HEIGHTS OF SIDE BLOCKS ARE TAKEN TO THE AFTER SIDE OF BLOCKS.
   (D) DIMENSIONS FOR SIDE BLOCKS WERE OBTAINED FROM LINES AND OFFSETS, REFERENCE 4.

4. NOTE: ABNORMALITIES AND/OR ERRORS IN CONSTRUCTION HAVE NOT BEEN DOCUMENTED. THEREFORE, SIDE BLOCKS UNDER CHINES SHALL BE SET UP OUTBOARD AND HAULED INBOARD TO SET ("HAUL BLOCKS").

5. THE USE OF A DIVER DURING DOCKING IS MANDATORY.

6. COMPLETE PAINTING OF HULL
   (A) IN ORDER TO CLEAN AND PAINT THE ENTIRE BOTTOM OF THE VESSEL IN THREE SUCCESSIVE DOCKINGS THE FOLLOWING POSITIONS OF THE VESSEL ARE NECESSARY:
      (1) POSITION NO. 1, SEE ZONE 9-D
      (2) POSITION NO. 2, SEE ZONE 9-C
      (3) POSITION NO. 3, SEE ZONE 9-B
   (B) REPEAT CYCLE OF POSITIONS. ASCERTAIN FROM VESSEL THE POSITION OF VESSEL AT ITS LAST DOCKING.

7. DIMENSIONS OF OFFSET TABLES FOR BILGE BLOCKS ARE GIVEN IN FEET-INCHES-SIXTEENTHS OF AN INCH.

8. KEEL BLOCKS SHALL BE CONFIGURED TO CLEAR DRAIN PLUGS.

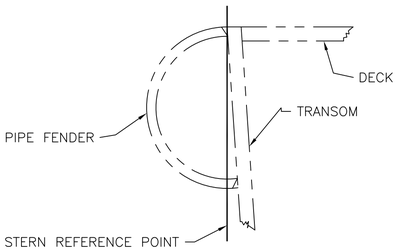
9. BLOCKING
   (A) THE BLOCKING SHOWN ON THIS PLAN IS THAT REQUIRED FOR BLOCKING UNDER ORDINARY UNDAMAGED CONDITIONS FOR 3'-0", 6'-0" OR 12'-0" SPACED BEARERS IN DRYDOCK.
   (B) KEEL BLOCKS
      (1) KEEL BLOCKS SHALL BE 14"X 14" HARD WOOD TIMBERS SPACED AS SHOWN ON PLAN 20-C.
      (2) 2 INCH MIN THICKNESS SOFTWOOD CAPS REQUIRED BETWEEN UPPER TIMBER AND KEEL.
      (3) IF 14" SQUARE TIMBERS ARE STACKED MORE THAN 2 BLOCKS HIGH, CRIB BLOCKS FOR 10 FEET AT EACH END.
   △D (C) SIDE BLOCKS
      (1) SIDE BLOCKS SHALL BE LOCATED INBOARD OF THE BILGE KEELS AND HULL ZINCS. SEE SECTION 6-C.
      (2) BLOCKS SHALL CROSS TRANSVERSE FRAMES.
      (3) SOFT WOOD CAPS OF 2" MIN. THICKNESS ARE REQUIRED.
      (4) DIRECTION OF BEVEL ON BLOCKS IN 12" IS DOWN (-) OR UP (+) FROM THE HEIGHT GIVEN AT THE AFTER SIDE OF THE BLOCK IN THE TABLES OF OFFSETS, DIM 'C'.
      (5) SIDE BLOCKS ARE NUMBERED FROM AFT, FORWARD WITH AFTER BLOCK AS NO. 1.
      (6) SIDE BLOCKS SHALL BE OF THE FITTED TYPE, NOT "ROUND HEAD" OR "UNIVERSAL."

10. HYDROSTATIC VALUES FOR DOCKING WERE ROUNDED FROM REFERENCE 11.

11. HEIGHT OF BLOCKS TO BE DETERMINED WITH CONSIDERATION GIVEN TO PROPELLER TIP CLEARANCE AND RUDDER REMOVAL REQUIREMENTS. SHIP-CHECK RUDDER STOCK AGAINST REFERENCE 12 BEFORE PROCEEDING.

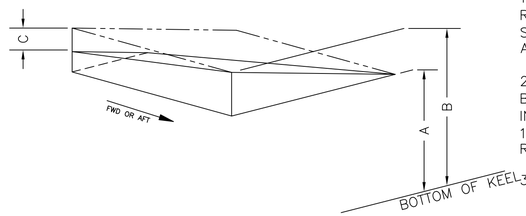
12. NO BLOCKS TO BE PLACED IN WAY OF SEA CHESTS, UNDERWATER LOGS OR SOUND PROJECTORS OR TRANSDUCERS.

13. THIS DRAWING SUPERSEDES REFERENCE NOS. 1, 2, 5 AND 7, AS APPLIED TO YTT-12.



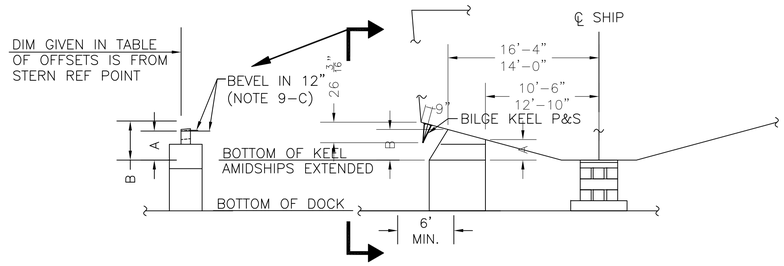

## DETAIL 7-D

STERN REFERENCE POINT
SEE GEN'L NOTE 1.
NOT TO SCALE




## TYP. BEVELED BLOCK

FWD BLOCK SHOWN
AFT BLOCK SIM
NOT TO SCALE




## SECTION 6-C

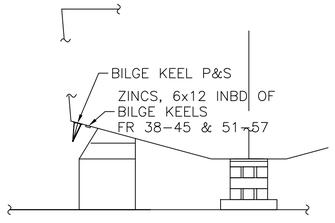
FR 38 LKG AFT
TYP DETAILS OF DOCKING BLOCKS.
SEE PANEL 9 FOR TABLES OF OFFSETS.

NOT TO SCALE

| NO | TITLE | DRAWING NUMBER |
|---|---|---|
| 14 | 150KHZ ADCP & 12 KHZ TRANSDUCERS | NF-461-001 |
| 13 | KONGSBERG MULTIBEAM EM1002 INSTALLATION | NF-462-001 |
| 12 | YTT-12 CONV'N RUDDER & RUDDER STOCK DESIGN | 562-001 (YEAR 2001) |
| 11 | TRIM & STABILITY BOOKLET (POST COVERSION TO NOAA SHIP) | NF-079-02 (YEAR 2002) |
| 10 | ENGINE ROOM MODULE (YTT 9 CLASS) (MODULE D) | 101-6500832 (NAVSEA) |
| 9 | VEHICLE RECOVERY MODULE (YTT 9 CLASS) (MODULE E) | 101-6500833 (NAVSEA) |
| 8 | STERN MODULE (YTT 9 CLASS) (MODULE F) | 101-6500834 (NAVSEA) |
| 7 | CATHODIC PROTECTION & DOCKING PLAN | 633-6501005 |
| 6 | TORPEDO TUBE MODULE (YTT 9 CLASS) (MODULE B) | 101-6500830 (NAVSEA) |
| 5 | CAPE FLATTERY (YTT-9) DOCKING DRAWING (DATED 1992) | YTT-9 4345690 (NAVSEA) |
| 4 | LINES & OFFSETS YTT-9 186'-6" X40 X 16 TORP. TEST CRAFT | 5777A004 (MCDERMOTT SHPYD) |
| 3 | BOOKLET OF GENERAL PLANS | NF-085-001 (YEAR 2002) |
| 2 | DOCKING DRAWING (CAPE FLATTERY YTT-9) (DATED 1997) | 53711 801 5284787 (NAVSEA) |
| 1 | CASCADE GENERAL, DD#1 BLOCK ARRGT FOR NANCY FOSTER | DATED 7-16-02 |

## REFERENCES

△C




## SECTION 6-A

FR 38 LKG AFT
LOCATION OF HULL ZINCS
INBOARD OF BILGE KEELS

△D

NOT TO SCALE

## CRITICAL DIMENSIONS

| | |
|---|---|
| LENGTH OVERALL | 186'-6" |
| LENGTH BETWEEN PERPENDICULARS | 176.62' |
| BREADTH (EXTREME, AND TRANSOM) | 40'-0" |
| BEAM, ON DWL (10'-6") | 39'-1 13/16" |
| FRAME SPACING | 24" |
| FIRST SIDE BLOCK IS: | FROM STERN REF POINT |
| NO. 1 DOCKING POSITION | 56'-7" |
| NO. 2 DOCKING POSITION | 58'-7" |
| NO. 3 DOCKING POSITION | 54'-7" |
| END OF SKEG | 16'-1" |
| EXTREME FULL LOAD DISPLACEMENT | 1271.23 LT |
| DRAFT, EXTREME FULL LOAD | 11'-0" |

| REV | SHT | ZONE | ITEM | DESCRIPTION | DATE | APPD |
|---|---|---|---|---|---|---|
| E | 2<br>3 | 12D<br>15C<br>20B<br>20C | | 1. MODIFIED PORT TRANSDUCER POD; RELOCATED EXISTING 150KHZ AND 12 KHZ XDCRS<br>2. ADDED NEW SIMRAD ES XDCRS TO PORT POD<br>3. ADDED RESON SEA CHEST AND TRANSDUCERS<br>4. ADDED VALEPORT SVS THRU HULL<br>5. ADDED ITEMS 49a THRU 49f, 55 & 56, 56a THRU 56c<br>6. DELETED KEEL BLOCK POSITION 1 AT FRAME 31 AND POSITION 2 AND FRAME 30 | 3/4/11 | BECI |
| D | 1<br>2<br>3 | 5B<br>6A<br>15C<br>20B<br>20C | | INCORPORATE P/E's COMMENTS | 1/19/06 | |
| C | 1<br>2<br>3 | 8A<br>12D,15C<br>20B,20C | 1 | ADDED REF 13, 14<br>ADDED HULLOPENINGS 48-53<br>REVISED SIDE BLOCKS GEOMETRY<br>ADDED TABLE 13-A | 12/17/05 | |
| B | 1<br>2<br>3 | 6C<br>9B,C,D<br>20C | 1 | POSITION #1: MODIFIED SIDE BLOCKS GEOMERTY FOR BILGE KEELS | 10/17/05 | |
| A | 1<br>3 | 6C<br>20B<br>20C | 1 | ADDED BILGE KEELS AND EM1002 FAIRING | 10/07/05 | APPD |
| – | ALL | ALL | ALL | INITIAL ISSUE | --/--/-- | APPD |

## REVISIONS

**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**
OFFICE OF MARINE & AVIATION OPERATIONS


Seaworthy Systems, Inc.
P.O. BOX 965
ESSEX, CT 06426
TEL: (860) 767-9061


CONTRACT #
50-ABNA-0-00032
TAR-SSI-021-(02)

| | | |
|---|---|---|
| DSGN | WRP | 1/28/03 |
| DWN | WRP | 1/28/03 |
| CHK | JEK | 1/29/03 |
| CHK | JAH | 1/29/03 |

–
NOAA APPROVAL

# NOAA SHIP NANCY FOSTER

NOAA CONVERSION

DOCKING PLAN

| SIZE | CAGE CODE | NOAA DRAWING NUMBER | REV |
|---|---|---|---|
| D | 0YLJ5 | NF-085-002 | E |

SCALE: 1/8"=12" | CAD FILENAME NF085002 | SHT 1 OF 3

## LIST OF ALL OPENINGS AND OBSTRUCTIONS IN SHELL

| ITEM NO. | SERVICE | SIZE OF HOLE | SIDE | FWD OF STERN REF POINT | DISTANCE OFF ℄ SHIP | HEIGHT ABV BOTTOM OF KEEL | REFERENCE |
|---|---|---|---|---|---|---|---|
| 1 | HAWSE PIPE, STBD | 11" X 16" | S | 173'-1" | 5'-9" | 10' | 2 |
| 2 | HAWSE PIPE, PORT | 11"x 16" | P | 173'-1" | 5'-9" | 10' | 2 |
| 3 | CHAIN LKR OVBD DISCH | ø2" | S | 167'-0" | 7'-7" S | 14'-11" | 2 |
| 4 | MEDICAL LKR DRAIN | ø2" | S | 163'-7" | 9'-7" S | 14'-11" | 2 |
| 5 | 200kHz DEPTH SOUNDER | ø3" | S | 159'-8" | 6" S | -2" | 1 |
| 6 | DOPPLER SPEED LOG | ø6" | P | 162'-6" | 6" P | – | 1 |
| 7 | BOW THRUSTER SEACHEST | 5'-2"x 24" | CL | 155'-11" | – | – | 6 |
| 8 | THRUSTER VANE | 10' X 20" | S | 155' | 10'-6" | 7' | 6 |
| 9 | THRUSTER VANE | 10' X 20" | P | 155' | 10'-6" | 7' | 6 |
| 10 | DECK DRAIN | ø¾" | P | 149'-10" | | 14'-8" | 2 |
| 11 | VOID TANK VENT | ø2" | S | 142'-10" | | 15'-0" | 2 |
| 12 | DECK DRAIN | ø1¾" | S | 141'-2" | | 14'-8" | 2 |
| 13 | FAN COIL (FCU) DRN | ø2" | S | 141'-6" | | 14'-6" | 2 |
| 14 | FCU DRAIN | ø1¾" | P | 135'-9" | | 14'-4" | 2 |
| 15 | FCU DRAIN | ø1¾" | S | 134'-9" | | 14'-11" | 2 |
| 16 | DECK DRAIN | ø1¾" | S | 131'-1" | | 14'-9" | 2 |
| 17 | SWG OVBD DISCH | ø2" | S | 123'-8" | | 14'-6" | 2 |
| 18 | COMPR AIR OVBD DISCH | ø2¾" | P | 121'-8" | | 14'-11" | 2 |
| 19 | FCU DRAIN | ø1¾" | S | 111'-3" | | 14'-9" | 2 |
| 20 | DECK DRAIN | ø1¾" | P | 117'-0" | | 14'-11" | 2 |
| 21 | FCU DRAIN | ø1¾" | S | 96'-8" | | 14'-9" | 2 |
| 22 | FCU DRAIN | ø1¾" | P | 111'-3" | | 15'-5" | 2 |
| 23 | HYDROPHONE PIPE | ø5" | S | 92'-6" | 12" | – | 1 |
| 24 | HYDROPHONE PIPE | ø5" | P | 92'-6" | 12" | – | 1 |
| 25 | A/C OVBD DISCH | ø4¼" | S | 79'-6" | | 14'-3" | 2 |
| 26 | FCU DRAIN | ø1¾" | P | 91'-2" | | 14'-10" | 2 |
| 27 | MAIN MACH SEACHEST | 18"x 34½" | S | 74'-1" | 6'-8" | 12" | 10 |
| 28 | BALLAST OVBD DISCH | ø6½" | P | 89'-3" | | 12'-7" | 2 |
| 29 | ENGINE CLG OVBD DISCH | ø6½" | S | 71'-0" | | 12'-7" | 2 |
| 30 | DECK DRAIN | | S | 70'-11" | | 17'-1" | 2 |
| 31 | DECK DRAIN | ø1½" | P | 66'-10" | | 14'-10" | 2 |
| 32 | MOON POOL PIPE | ø12" | S | 56'-1" | 4'-0" | (1 1/2") | 9 |
| 33 | AUX MACH SEACHEST | 18"x 34½" | P | 56'-1" | 5'-5" | 18" | 9 |
| 34 | SEAWTR OVBD DISCH | ø1¼" | S | 15'-4" | | 14'-11" | 2 |
| 35 | DECK DRAIN | ø1¼" | P | 54'-3" | | 14'-7" | 2 |
| 36 | AZUMUTHING THRUSTER | – | S | 7'-7" | 12'-0" | 3'-10" | 8 |
| 37 | BOLSTER | 24" X 12" | S | 37'-2" | | 13'-6" | 2 |
| 38 | BOLSTER | 24" X 12" | P | 31'-6" | | 13'-6" | 2 |
| 39 | PROPELLER CENTERLINE | – | CL | – | – | 4'-0" | 2 |
| 40 | SEAWTR OVBD DISCH | ø1¼" | P | 15'-3" | | 14'-11" | 2 |
| 41 | DECK DRAIN | ø1¼" | P | 16'-7" | | 13'-11" | 2 |
| 42 | AZUMUTHING THRUSTER | – | P | 7'-7" | 12'-0" | 3'-10" | 8 |
| 43 | WORK SHOP SINK DRAIN | | P | 75'-5" | | 16'-11" | 2 |
| 44 | FCU DRAIN | | P | 67'-10" | | 14'-9" | 2 |
| 45 | FCU DRAIN | | S | 67'-7" | | 14'-10" | 2 |
| 46 | 50 KHz TRANSDUCER | ø3" | S | 134'-0" | 10" | – | 1 |
| 47 | SKEG DRAIN PLIG | ø3" | CL | 18'-4" | – | – | 1 |
| 48 | EM1002 XDCRS POD | – | S | 132'-6 7/16" | 6'-0" | (1'-11¼") | 13 |
| 49 | 150 & 12 KHZ & SIMRAD ES POD | | P | 101'-4 1/4" | 5'-1" | (1'-6½") | 14 |
| 49a | SIMRAD ES200-7C | | P | 103'-2" | 5'-1" | (1'-6½") | 14 |
| 49b | SIMRAD ES70-C | | P | 104'-3 3/4" | 5'-1" | (1'-6½") | 14 |
| 49c | KNUDSEN 12 KHZ | | P | 106'-1" | 5'-1" | (1'-6½") | 14 |
| 49d | SIMRAD ES38-B | | P | 108'-1" | 5'-1" | (1'-6½") | 14 |
| 49e | ADCP 150 KHZ | | P | 109'-11 3/4" | 5'-1" | (1'-6½") | 14 |
| 49f | SIMRAD ES120-7C | | P | 111'-5 1/8" | 5'-1" | (1'-6½") | 14 |
| 50 | BENCH MARK (FR 22) | | CL | 139'-1" | 0'-0" | | |
| 51 | BENCH MARK | | CL | 124'-3 1/2" | 0'-0" | | |
| 52 | SEA SUCTION | ø5" | P | 131'-9" | 5'-9" | – | |
| 53 | 200 KHZ TRANSDUCER | 4 3/8"øID | P | 122'-1" | 3'-0" | – | 14 |
| 54 | SEA SURF TEMP PROBE | 2"ø | P | 122'-1" | 3'-0" | 7'-6" | |
| 55 | VALEPORT SVS | 4"ø | S | 118'-1 1/8" | 5'-0" | 0'-5" | 14 |
| 56 | RESON SEA CHEST | 40 ¾"x26 ¾" | S | 125'-2 7/8" | 1'-9 1/2" | 0'-0" | 14 |
| 56a | RESON 7125-MAIN | | S | 124'-1 1/2" | 1'-9 1/2" | 0'-0" | 14 |
| 56b | RESON 7125-200KHZ | | S | 122'-8" | 2'-2 5/8" | 0'-0" | 14 |
| 56c | RESON 7125-400KHZ | | S | 122'-8" | 1'-3 5/8" | 0'-0" | 14 |

TABLE 15-C

NOTE: THIS TABLE SHOWS ALL OPENINGS, ABOVE AND BELOW CHINE.
TABLE 12-D REPEATS ALL INFORMATION FOR OPENINGS BELOW CHINE.

## LIST OF ALL OPENINGS AND OBSTRUCTIONS IN SHELL BELOW CHINE (LISTED FROM BOW AFT)

| ITEM NO. | SERVICE | SIZE OF HOLE | SIDE | FWD AFT | FRAME | FWD OF STERN REF POINT | DISTANCE OFF ℄ SHIP | HEIGHT ABV BOTTOM OF KEEL | REFERENCE |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 200kHz DEPTH SOUNDER | ø3" | S | 18" A | 11 | 159'-8" | 6" S | -2" | 1 |
| 6 | DOPPLER SPEED LOG | ø6" | P | 7" A | 10 | 162'-6" | 6" P | – | 1 |
| 7 | BOW THRUST SEACHEST | 5'-2"x 24" | CL | – | 12-15 | 155'-11" | – | – | 6 |
| 8,9 | THRUSTER VANES | 10' x 24" | P/S | 6" F | 15 | 155' | 10'-6" | 7' | 6 |
| 46 | 50 mH TRANSDUCER | ø3" | S | 11" A | 24 | 134'-0" | 10" | – | 1 |
| 23 | HYDROPHONE PIPE | ø5" | S | 7" A | 45 | 92'-6" | 12" | – | 1 |
| 24 | HYDROPHONE PIPE | ø5" | P | 7" A | 45 | 92'-6" | 12" | – | 1 |
| 27 | MAIN MACH SEACHEST | 18"x 34½" | S | 12" A | 54 | 74'-1" | 6'-8" | 12" | 10 |
| 32 | MOON POOL PIPE | ø12" | S | 12" A | 63 | 56'-1" | 4'-0" | (1 1/2") | 9 |
| 33 | AUX MACH SEACHEST | 18"x 34½" | P | 12" A | 63 | 56' | 5'-5" | 18" | 9 |
| 47 | SKEG DRAIN PLIG | ø3" | CL | 9" A | 82 | 18'-4" | – | – | 1 |
| 36 | AZUMUTHING THRUSTER | – | S | 6" F | 88 | 7'-7" | 12-0" | 3'-10" | 8 |
| 42 | AZUMUTHING THRUSTER | – | P | 6" F | 88 | 7'-7" | 12-0" | 3'-10" | 8 |
| 48 | EM1002 XDCRS POD | – | S | 6.5" A | 25 | 132'-6 7/16" | 6'-0" | (1'-11¼") | 13 |
| 49 | 150 & 12 KHZ & SIMRAD ES POD | | P | 12" A | 34 | 101'-4 1/4" | 5'-1" | (1'-6½") | 14 |
| 50 | BENCH MARK (FR 22) | | CL | 0" A | 22 | 139'-1" | 0'-0" | | |
| 51 | BENCH MARK | | CL | 9.5" A | 29 | 124'-3 1/2" | 0'-0" | | |
| 52 | SEA SUCTION | ø5" | P | 16" A | 25 | 131'-9" | 5'-9" | – | |
| 53 | MOUNTING RING | 4 3/8"øID | P | 12" A | 30 | 122'-1" | 3'-0" | – | |
| 55 | VALEPORT SVS | 4"ø | S | 12" A | 32 | 118'-1 1/8" | 5'-0" | 0'-5" | 14 |
| | | | | | | | | | |
| | | | | | | | | | |

TABLE 12-D

NOTE: SEE TABLE 15-C FOR OPENINGS ABOVE CHINE

## TABLE OF DISPLACEMENT AND OTHER PROPERTIES FOR DOCKING. SEE NOTE 10.

NO CORRECTIONS FOR TRIM

| MEAN DRAFT (FT) | DISPLACEMENT (TONS) (SEA WATER) | APPROX. MOMENT TO CHANGE TRIM ONE INCH (FOOT TONS) | C.B. AFT OF FWD PERP (FR 3) (FT) | FWD OF STERN REF PT | TONS PER INCH IMMERSION (SEA WATER) | LONG. CTR OF FLOATATION (FT) AFT OF FP | LONG. CTR OF FLOATATION (FT) FWD OF STERN REF PT | METACENTER ABV KEEL FEET |
|---|---|---|---|---|---|---|---|---|
| 9.00 | 918 | 165.1 | 82.64 | 94.4 | 14.1 | 94.71 | 82.4 | 26.28 |
| 9.50 | 1005 | 182.6 | 83.85 | 93.2 | 14.7 | 96.83 | 80.3 | 26.47 |
| 10.0 | 1094 | 184.3 | 84.89 | 92.2 | 14.7 | 96.73 | 80.4 | 25.26 |
| 10.5 | 1182 | 186.0 | 85.78 | 91.3 | 14.8 | 96.65 | 80.4 | 24.26 |
| 11.0 | 1271 | 187.6 | 86.53 | 90.6 | 14.8 | 96.58 | 80.5 | 23.43 |
| 11.5 | 1360 | 189.2 | 87.19 | 89.9 | 14.9 | 96.51 | 80.6 | 22.74 |
| DRAFT | DISP | MT1 | LCB | LCB | TPI | LCF | LCF | KMT |

TABLE 12-B

## BEARING ON BLOCKS

| SUPPORT | 6'-0" SPACED KEEL 12'-0" SPACED BILGE |
|---|---|
| SIDE BLOCKS 12"X42"(TOTAL P/S) | 6,048 SQ IN. 42 SQ FT. |
| * KEEL BLOCKS 14"X48" (20) | 13,440 SQ IN. 93.3 SQ FT. |
| TOTAL BLOCKING | 19,488 SQ IN. 135 SQ FT. |
| BEARING PER SQ IN. BLOCKING<br>BEARING PER SQ FT. BLOCKING | 146 LB<br>9.4 TONS |

*NOTE: KEEL BLOCK BEARING AREA BASED ON A 48" X 14" SHOE
& EXTREME FULL LOAD DISPLACEMENT: 1271 LONG TONS OR 2,847,040 LBS.

TABLE 12-A

TABLE 13-A: OF OFFSETS FOR BILGE KEELS

| SIDE | FWD OF REF PT | HB | HT |
|---|---|---|---|
| P/S | 33-1-0 | 19-1-11 | 8-4-6 |
| | 54-7-0 | 19-1-5 | 4-3-8 |
| | 66-7-0 | 19-0-11 | 3-1-3 |
| | 78-7-0 | 18-11-2 | 2-2-6 |
| | 90-7-0 | 18-11-1 | 1-9-5 |
| | 102-7-0 | 18-11-0 | 1-9-6 |
| | 114-7-0 | 18-10-5 | 2-1-5 |
| | 123-1-0 | 18-8-12 | 4-9-2 |

**OFFSETS ARE GIVEN IN FEET - INCHES - SIXTEENTHS

TABLE 13-A

TABLE 9-D: OF OFFSETS FOR SIDE BLOCKS
INTERVALS GIVEN IN INCREMENTS OF 12'-0"

NO. 1 DOCKING POSITION-AFTER SIDE OF NO.1 BLOCK 57' FROM REF PT

| SIDE | BLK NO. | FWD OF REF PT | POINT A HB | POINT A HT | POINT B HB | POINT B HT | BEVEL IN 12" FOR C |
|---|---|---|---|---|---|---|---|
| P/S | 1 | 56-7-0 | 12-10-0 | 3-9-12 | 16-4-0 | 5-2-2 | -16/16 |
| | 2 | 68-7-0 | | 3-1-0 | | 4-2-12 | -11/16 |
| | 3 | 80-7-0 | | 2-6-12 | | 3-6-10 | -5/16 |
| | 4 | 92-7-0 | | 2-4-1 | | 3-3-2 | 0 |
| | 5 | 104-7-0 | 10-6-0 | 1-8-15 | 14-0-0 | 2-8-2 | +4/16 |
| | 6 | 116-7-0 | | 1-10-11 | | 2-10-14 | +4/16 |

**OFFSETS ARE GIVEN IN FEET - INCHES - SIXTEENTHS

TABLE 9-C: OF OFFSETS FOR SIDE BLOCKS
INTERVALS GIVEN IN INCREMENTS OF 12'-0"

NO. 2 DOCKING POSITION-AFTER SIDE OF NO.1 BLOCK 59' FROM REF PT

| SIDE | BLK NO. | FWD OF REF PT | POINT A HB | POINT A HT | POINT B HB | POINT B HT | BEVEL IN 12" FOR C |
|---|---|---|---|---|---|---|---|
| P/S | 1 | 58-7-0 | 12-10-0 | 3-8-4 | 16-4-0 | 5-0-3 | -16/16 |
| | 2 | 70-7-0 | | 2-11-14 | | 4-1-5 | -12/16 |
| | 3 | 82-7-0 | | 2-6-5 | | 3-6-0 | -5/16 |
| | 4 | 94-7-0 | | 2-4-2 | | 3-3-3 | 0 |
| | 5 | 106-7-0 | 10-6-0 | 1-9-4 | 14-0-0 | 2-8-9 | +4/16 |
| | 6 | 118-7-0 | | 1-11-0 | | 2-11-6 | +4/16 |

**OFFSETS ARE GIVEN IN FEET - INCHES - SIXTEENTHS

TABLE 9-B: OF OFFSETS FOR SIDE BLOCKS
INTERVALS GIVEN IN INCREMENTS OF 12'-0"

NO. 3 DOCKING POSITION-AFTER SIDE OF NO.1 BLOCK 55' FROM REF PT

| SIDE | BLK NO. | FWD OF REF PT | POINT A HB | POINT A HT | POINT B HB | POINT B HT | BEVEL IN 12" FOR C |
|---|---|---|---|---|---|---|---|
| P/S | 1 | 54-7-0 | 12-10-0 | 3-11-4 | 16-4-0 | 5-4-1 | -16/16 |
| | 2 | 66-7-0 | | 3-2-4 | | 4-4-5 | -13/16 |
| | 3 | 78-7-0 | | 2-7-7 | | 3-7-9 | -8/16 |
| | 4 | 90-7-0 | | 2-4-2 | | 3-3-5 | -3/16 |
| | 5 | 102-7-0 | 10-6-0 | 1-8-9 | 14-0-0 | 2-7-12 | +2/16 |
| | 6 | 114-7-0 | | 1-10-6 | | 2-10-7 | +4/16 |

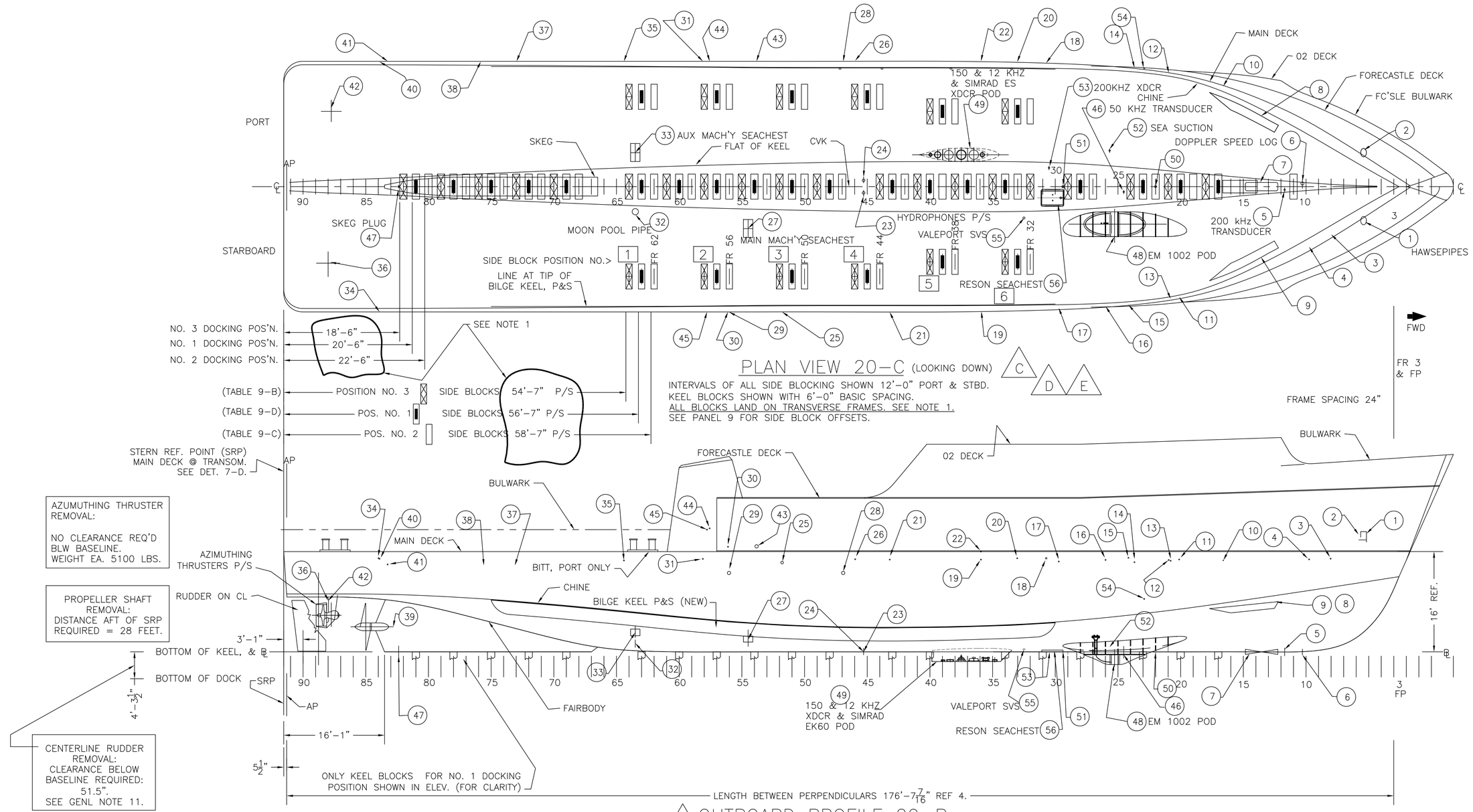
**OFFSETS ARE GIVEN IN FEET - INCHES - SIXTEENTHS

## PROPELLER TIP CLEARANCE TABLE

| TRIM (INCHES) | BY | PROPELLER CLEARANCE INCHES FROM SKEG AFT END |
|---|---|---|
| 0 | EVEN KEEL | 3 |
| 1 | STERN | 2.75 |
| 2 | STERN | 2.5 |
| 3 | STERN | 2.375 |
| 4 | STERN | 2.125 |

TABLE 10-A

| SIZE | CAGE CODE | NOAA DRAWING NUMBER | REV |
|---|---|---|---|
| D | 0YLJ5 | NF-085-002 | E |
| SCALE: AS SHOWN | | CAD FILENAME NF085002 | SHT 2 OF 3 |




## PLAN VIEW 20-C (LOOKING DOWN)

INTERVALS OF ALL SIDE BLOCKING SHOWN 12'-0" PORT & STBD.
KEEL BLOCKS SHOWN WITH 6'-0" BASIC SPACING.
ALL BLOCKS LAND ON TRANSVERSE FRAMES. SEE NOTE 1.
SEE PANEL 9 FOR SIDE BLOCK OFFSETS.

C D E

## OUTBOARD PROFILE 20-B

C D E

PORT AND STARBOARD SIDES SHOWN TOGETHER.

SEE PANEL 9 FOR SIDE BLOCK OFFSETS.
SEE 15-C FOR TABLE OF OPENINGS.
SEE 12-B FOR HYDROSTATIC PROPERTIES.
SEE 12-A FOR BEARING ON BLOCKS.
SEE 10-A FOR PROPELER TIP CLEARANCES.

0 1' 2' 4' 8' 16' 24'
SCALE: 1/8" = 1'-0"

| SIZE | CAGE CODE | NOAA DRAWING NUMBER | REV |
|---|---|---|---|
| D | 0YLJ5 | NF-085-002 | E |
| SCALE: 1/8"=12" | | CAD FILENAME NF085002 | SHT 3 OF 3 |